Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for computer-implemented concurrent design optimization comprising steps of:

developing a plurality of single-disciplinary modules;

integrating said plurality of single-disciplinary modules into a multi-disciplinary module by providing at least one interface among said plurality of single-disciplinary modules;

executing said multi-disciplinary module by concurrently executing at least two of said plurality of single-disciplinary modules with at least one computer, wherein said at least two single-disciplinary modules communicate via said at least one interface; and

performing a concurrent system level optimization using said multi-disciplinary module by providing global inputs from a multi-disciplinary reusable component to the system level optimization and receiving global outputs from the system level optimization by the multi-disciplinary reusable component.

2. (previously presented) The method of Claim 1 further comprising a step of performing a computer-implemented system level sensitivity analysis using said multi-disciplinary module.

3. (previously presented) The method of Claim 1 wherein said step of developing said plurality of single-disciplinary modules comprises providing at least one simulation code, at least one simulation code input file, and at least

one simulation code output file for each of said plurality of single-disciplinary modules.

4. (previously presented) The method of Claim 3 wherein said step of developing said plurality of single-disciplinary modules comprises constructing a reusable component for each of said plurality of single-disciplinary modules, wherein each of said reusable components wraps a simulation code by file parsing a simulation code input file and a simulation code output file.

5. (previously presented) The method of Claim 4 wherein providing at least one interface among said plurality of single-disciplinary modules in said integrating step comprises interfacing one of said plurality of single-disciplinary modules to another of said plurality of single-disciplinary modules wherein said reusable component of one of said plurality of single-disciplinary modules communicates with said reusable component of another of said plurality of single-disciplinary modules.

6. (previously presented) The method of Claim 5, wherein:

said integrating step comprises interfacing each of said plurality of single-disciplinary modules with at least one other of said plurality of single-disciplinary modules; and

said executing step comprises each of said plurality of single-disciplinary modules communicating with at least one other of said plurality of single-disciplinary modules.

7. (previously presented) The method of Claim 1, wherein said step of performing system level optimization comprises concurrently performing single-discipline analyses by executing said plurality of single-disciplinary modules on a plurality of computers, wherein at least two of said single-disciplinary modules communicate via said at least one interface between at

least two of said plurality of computers.

8. (original) The method of Claim 7, wherein said step of performing single-discipline analyses includes performing a trajectory analysis.

9. (original) The method of Claim 7, wherein said step of performing single-discipline analyses includes performing a thermal analysis.

10. (original) The method of Claim 7, wherein said step of performing single-discipline analyses includes performing a TPS thickness analysis.

11-16. (canceled)

17. (currently amended) A system for concurrent design optimization comprising:

a plurality of single-disciplinary modules, each of said plurality of single-disciplinary modules having a simulation code, a computer wherein said computer executes said simulation code, and a reusable component providing inputs to said computer and said computer providing outputs back to said reusable component; and

a multi-disciplinary module including said plurality of single-disciplinary modules wherein at least one of said plurality of single-disciplinary modules has an interface between reusable components, said interface between reusable components communicating with another of said plurality of single-disciplinary modules, whereby said plurality of single-disciplinary modules is integrated into said multi-disciplinary module and wherein said multi-disciplinary module has a multi-disciplinary reusable component that receives concurrently global outputs from said multi-disciplinary module and concurrently provides global inputs to said multi-disciplinary module.

18. (original) The system of Claim 17, wherein each of said plurality of single-disciplinary modules has a simulation code input file in communication with said simulation code and a simulation code output file in communication with said simulation code.

19. (original) The system of Claim 17, wherein each of said plurality of single-disciplinary modules has a reusable component in communication with said simulation code input file and in communication with said simulation code output file.

20. (original) The system of Claim 19, wherein each of said reusable components communicates with said simulation code input file and said simulation code output file by file parsing said simulation code input file and said simulation code output file, whereby said simulation code is wrapped by said reusable component.

21. (original) The system of Claim 20, wherein said at least one of said plurality of single-disciplinary modules communicates with said other of said plurality of single-disciplinary modules through said interface between reusable components by passing information from a first reusable component having a first wrapped simulation code of said at least one of said plurality of single-disciplinary modules to a second reusable component having a second wrapped simulation code of said other of said plurality of single-disciplinary modules.

22. (original) The system of Claim 21, wherein each of said plurality of single-disciplinary modules communicates with at least one other of said plurality of single-disciplinary modules through said interface between reusable components by passing said information.

23. (original) The system of Claim 17, wherein said plurality of single-disciplinary modules includes a trajectory analysis module.

24. (original) The system of Claim 17, wherein said plurality of single-disciplinary modules includes a thermal analysis module.

25. (original) The system of Claim 17, wherein said plurality of single-disciplinary modules includes a TPS thickness analysis module.

26. (currently amended) A system for concurrent design optimization comprising:

a plurality of single-disciplinary modules, each of said plurality of single-disciplinary modules having a simulation code, a computer wherein said computer concurrently executes said simulation code, a simulation code input file in communication with said simulation code, a simulation code output file in communication with said simulation code, and each of said plurality of single-disciplinary modules having a reusable component in communication with said simulation code input file and in communication with said simulation code output file;

a multi-disciplinary module including said plurality of single-disciplinary modules wherein;

at least one of said plurality of single-disciplinary modules has an interface between reusable components to another of said plurality of single-disciplinary modules,

said at least one of said plurality of single-disciplinary modules communicates with said other of said plurality of single-disciplinary modules through said interface between reusable components by passing information from a first reusable component having a first wrapped simulation code of said at least one of said plurality of single-disciplinary modules to a second reusable component having a second wrapped simulation code of said

other of said plurality of single-disciplinary modules, whereby said plurality of single-disciplinary modules is integrated into said multi-disciplinary module; and

said multi-disciplinary module performs a concurrent design optimization process; and

a multi-disciplinary reusable component wherein:

said multi-disciplinary reusable component receives global outputs from said design optimization process and provides global inputs to said design optimization process; and

said multi-disciplinary reusable component incorporates a system level problem definition and interacts with a chief engineer during the performance of said design optimization process.